THAT WHICH IS CLAIMED IS:

1. A method (400) of compressing a digital image including a matrix of elements each one consisting of a plurality of digital components of different type representing a pixel, the method comprising the steps of:

splitting (455) the digital image into a plurality of blocks and calculating, for each block, a group of DCT coefficients for the components of each type,

quantizing (460-465) the DCT coefficients of each block using a corresponding quantization table scaled by a gain factor for achieving a target compression factor,

characterized by the steps of

determining (440) at least one energy measure of the digital image,

estimating (441-450) the gain factor as a function of the at least one energy measure, the function being determined experimentally according to the target compression factor.

2. The method (400) according to claim 1, wherein each group of DCT coefficients consists of a DC coefficient and a plurality of AC coefficients, the step (441-450) of estimating the gain factor including the steps of:

estimating (441) a first number of bits required to encode the AC coefficients of all the blocks using the quantization tables scaled by a pre-set factor as a first function of the at least one energy measure, the first function being determined

experimentally according to the target compression factor,

calculating (442) a second number of bits required to encode the DC coefficients of all the blocks using the quantization tables scaled by the pre-set factor,

estimating (443-445) a basic compression factor provided by the quantization tables scaled by the pre-set factor according to the first number of bits and the second number of bits, and

estimating (450) the gain factor as a second function of the basic compression factor, the second function being determined experimentally according to the target compression factor.

3. The method (400) according to claim 2, wherein the first function is a linear function and the second function is a quadratic function.

4. The method (400) according to claim 2 or 3, wherein the step of estimating (443-445) the basic compression factor includes the steps of:

estimating (443) a third number of bits, required to encode control values, according to the number of elements of the digital image,

calculating (445) the basic compression factor dividing the sum of the first, second and third number of bits by the number of elements of the digital image.

5. The method (400) according to any claim from 2 to 4, further comprising the steps of:

storing a plurality of sets of parameters representing the second function, each set of parameters being associated with a corresponding value of the target compression factor,

selecting (410) an image quality and determining a current value of the target compression factor as a function of the selected image quality,

reading (450) the parameters associated with the current value of the target compression factor and estimating the gain factor using the read parameters.

6. The method (400) according to any claim from 2 to 5, wherein the pre-set factor is determined experimentally according to the target compression factor.

7. The method (400) according to any claim from 1 to 6, wherein each element of the digital image consists of a luminance component, a first chrominance component, and a second chrominance component.

8. The method (400) according to claim 7, wherein the at least one energy measure consists of a total energy measure equal to the sum of an energy measure of the luminance components, an energy measure of the first chrominance components and an energy measure of the second chrominance components.

9. The method (400) according to claim 7 or 8, wherein the step (440) of determining the at least one energy measure comprises, for each type of component, the steps of:

calculating a horizontal Sobel image and a vertical Sobel image by means of a convolution of the elements of the digital image consisting of said type of component with a horizontal mask and a vertical mask, respectively,

calculating a total Sobel image by summing the horizontal Sobel image and the vertical Sobel image, and

summing the absolute value of each element of the total Sobel image.

10. The method (400) according to claim 9, wherein at least one quantization table is asymmetric along a horizontal direction and a vertical direction, the method further comprising the steps of:

multiplying the Sobel image associated with the at least one quantization table by a correction factor for compensating the asymmetry of the corresponding quantization table.

11. The method (400) according to any claim from 1 to 10, further comprising the steps of:

providing (410-430) an incomplete digital image wherein at least one component is missing in each element,

obtaining (435) the digital image from the incomplete digital image,

storing (438) the digital image onto a working memory and concurrently performing the steps of determining (440) the at least one energy measure and estimating (441-450) the gain factor,

reading (455-465) the digital image from the working memory for performing the steps of splitting

(455) the digital image and quantizing (460-465) the DCT coefficients.

12. The method (400a) according to any claim from 1 to 10, further comprising the steps of:

providing (410-430) an incomplete digital image wherein at least one component is missing in each element,

obtaining (435) the digital image from the incomplete digital image for performing the steps of determining (440) the at least one energy measure and estimating (441-450) the gain factor,

obtaining (435a) the digital image from the incomplete digital image again for performing the steps of splitting (455) the digital image and quantizing (460-465) the DCT coefficients.

13. A device (115) for compressing a digital image including a matrix of elements each one consisting of a plurality of digital components of different type representing a pixel, the device (115) comprising means (145) for splitting the digital image into a plurality of blocks and calculating, for each block, a group of DCT coefficients for the components of each type, means (150) for quantizing the DCT coefficients of each block using a corresponding quantization table scaled by a gain factor for achieving a target compression factor,

characterized in that

the device (115) further includes means (190) for determining at least one energy measure of the digital image, and means (170) for estimating the gain factor as a function of the at least one energy

measure, the function being determined experimentally according to the target compression factor.

14. The device (115) according to claim 13, further comprising a compression unit (135) comprising the means (145) for splitting the digital image and calculating the DCT coefficients and the means (150) for quantizing the DCT coefficients, a memory unit (175) for storing the quantization tables, an energy unit (190) including the means for determining the at least one energy measure, a processor unit (170) for controlling the device (115), communication means (120) for connecting the compression unit, the memory unit, the energy unit and the processor unit therebetween, the processor unit (170) estimating the gain factor under the control of a program stored onto the memory unit (175).

15. A digital still camera (100) comprising means (105-130) for providing the digital image and the device (115) of claim 13 or 14.